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Open Access Repository: A Comparative study of Germany, Switzerland and Austria

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Abstract -

Open access movement has been changed dramatically in recent past years. And it has been supported by individual researchers, institutes, organizations and publishers too. The current paper is a comparative study of Open Access Repositories (OARSs) among three European countries Austria Germany, Switzerland registered in Open Access Repository Ranking (OARSR) (<http://repositoryranking.org>.) website. It is also discuss and highlights about open access repositories, operational status, top ten repositories by collection wise and policy etc.. The study found that 181 unique open access repositories in three countries where as most of the open access repositories found from Germany 160 (88.40 %) repositories. Furthermore, study revealed that 81 (44.75%) repositories are using OPUS software to develop open repositories. Most of the open access repositories are institutional repositories by nature.

Keywords – Open Access Repository, Institutional Repository, Open Access Repository Ranking

Introduction-

With the advent of technologies and internet have changed the way of electronic publishing and providing fast, efficient, seamless and cost-effective electronic scholarly communication of information. It can be easily delivered electronically to the users. Open access repositories are repertories where the content is accessible freely or openly. There are different types of repositories are available such as institutional repositories, Government repositories, dataset repositories, publisher's repositories, cultural heritage repositories etc. The developing countries have started by developed open access repositories and provide free and cost-effective information to the users. These countries are facing problems while managing their open access repositories. (Sengupta, 2012) stated that around the globe publics are to make the research output of the individuals with free of cost by using open access repositories. But the situation is not exactly individual researchers are published their paper in proprietary journals and do not have much rights to uploaded the paper in publicly. Many individual researcher and institutions facing problems of copyright issues.

Literature Review -

There are some comparative studies have done in National and International level -

In recently (Hachani, Samir, 2017) stated that open access repository is more attention for promoting information access, implementing national open access policy, lowering the cost, demarcating internet access etc.

The study web accessibility in open access repositories conducted by Ramirez-Vega, Alexa in the year 2017 stated that 155 repositories from Europe, America, Africa, Asia and Oceania were using Dspace and Eprint as a technological platform. The critical issues were related to the structure of the page such as missing tags and that content can be missed by the users.

Ramirez Vega, Alexa in the year 2017, was found in his paper that is presented in Open repository conference 2017 that Dspace as a technical platform to use open access repository software. The study also found that the web accessibility problem in page structure such as tags missing, color, content of the page etc.

(Roy, Binaya Kumar; Biswas, Subal Chandra and Mukhopadaha, Partha Sarathi; 2016) found that the repository needs quality and quantity of content, metadata standards, technical specifications, copy rights barriers and policy issue are the major challenges for developing the IRs in open access environment.

The study Open access repositories at Arab level conducted by Benromdane (2016) the author concluded that maximum institutional repositories have not cleared their policies.

Open access repositories in global context conducted by Nilratan Bhattacharjee and Mukut Sarmah (2015) were discuss in his paper that the total no. of repository 2613 are registered in the world and out of this 1205 repositories are from Europe country. The repositories also explore the different aspects towards the developments of OARSs are software used, language, policies etc.

(Dora, Mallikarjun; and Maharana Bulu; 2012) were found in his paper that Institutional Repository have a great scope in India. The institutions like IITs, IIMs, IISc, IGNOU, CSIR and ICSSR are using Dspace and Eprint Software for creation of Institutional Repository. The data shows that 59% IR are used Dspace Software and 29% IR are used Eprint Software.

Macon, Bojan; 2013 mentioned in his paper that some metadata standards and protocol should be used for describe the records i.e. for author identifies, vocabulary controlled, stored record etc.

(Dhanavandan and Tamizhchelvan; 2015) studied the Institutional Repositories in BRICS countries. The data has been taken from OpenDOARS and analyzed by types of repositories, collation sizes, subjects, content, language and software. Among the 242 repositories Brazil has 84 (34.71%) repositories followed by the India 68 (28.10%), China 39(16.12%), South Africa 29 (11.98%) & Russia (9.109%). Brazil has the highest no. of repositories among BRICS countries.

In similar study Singh, 2014 Study BRICS publications with special reference to Directory of Open Access Journals (DOAJ) and Directory of Open Access Repositories (OpenDOARS). The analysed the contributions by year, language, and subject and country wise contributions.

(Gul and Ahmed Rah studied; 2009) DOARS a global perspective with an emphasis on Asia. In this paper the study was emphasis the Asian contributions. Data has been analyzed by content, country, subject wise, software, languages and repositories types and the total no. of 1250 data were taken from Open DOARS. Europe is the 1st position to contribute 599 (47.92%) of repositories in Asia, USA maintain the highest no. of repositories 317 (25.36%). The majorities of the content type were Journal Articles. Dspace was the most popular software among OARSs with 345 (27.60%) repositories. Out of 1250 repositories 1001 (80.08%) were Institutional Repositories. Multidisciplinary repositories are the highest no. 698 and the language has been used in 1060 repositories.

Open Access repository -

It is a digital platform where the research output is store and available/accessible freely to use, download and distribute to anyone. The characteristics of open access repositories must follow the open archives initiative protocol for metadata harvesting (OAI-MPH). The protocol allows federated archives to harvest the content of open access repositories that can be made available freely and worldwide. It provides open access to the institution's research output to the worldwide audience. It also measures the research and teacher activities of institutions and also encouraging the interdisciplinary to the research. The most of the repository software used for open access repositories are Dspace, Eprint, Digital commons etc.

Objectives -

The main purpose of this study is find out situation of Open Access Repository in three countries Germany, Switzerland and Austria.

- To explore the total numbers of OARs in Austria, Switzerland and Germany.
- To find out the various types of Institutional Repository in OARSs among Austria, Switzerland and Germany.
- To find out of Growth of Repository of OARSs among Austria, Switzerland and Germany.
- To identify the various software used for creations of OARs.
- To identify the types of organizations and their contributions in OARs

Methodology -

This comparative study on open access repositories found in Germany, Switzerland and Austria which are register in Open Access Repository Ranking (OARSR) (<http://repositoryranking.org>). The data had taken from Open Access Repository Ranking site and it was analyzed by using MS Excel based preset objectives.

Scope and Limitations of the Study -

This study is limited to Open Access Repositories which are recorded in Open Access Repository Ranking (OARSR).

Results and Discussions –

1) Distribution of repository country wise-

Sl. No.	Country	Repository	Percentage
1	Austria	7	3.87 %
2	Germany	160	88.40 %
3	Switzerland	14	7.73 %
	Total	181	100.00

Table-1

Table 1 shows the data, that distribution of an Open Access Repositories and their number of records available in Austria, Switzerland and Germany. The above 3 countries maintain their OARSs in their own way. The data found that, Germany contributes the highest number of repositories 160 (88.40 %) followed by Switzerland and Austria with 14 (7.73 %) and 7 (3.87 %) respectively.

2) Types of Repository-

Country	Cross-Institutional Repository	Disciplinary Repository	Institutional Repository	Not Specified	Total
Austria	0	0	1 (0.56%)	6 (3.32%)	7 (3.87%)
Germany	3 (1.66%)	14 (7.73%)	94 (51.93%)	49 (27.07%)	160 (88.40%)
Switzerland	1 (0.56%)	0	5 (2.76%)	8 (4.41%)	14 (7.73%)
Grand Total	4 (2.22%)	14 (7.73%)	100 (55.25%)	63 (34.80%)	181 (100)

Table -2

Table 2 states the types of repository which were categorised as Cross Institutional Repository, Disciplinary Repository, Institutional Repository and Not Specified. These repositories were classified based on the numbers of records available in the repositories. Germany is in first positions having highest number of Institutional Repository type 100 (55.25%). Followed by Disciplinary Repository 14 (7.73%) and 4 (2.22%) Cross Institutional Repository. It was noticed that some 63 (34.80%) repositories are not specified. These three countries are more concentrate on Institutional Repository.

3) Growth of Repository-

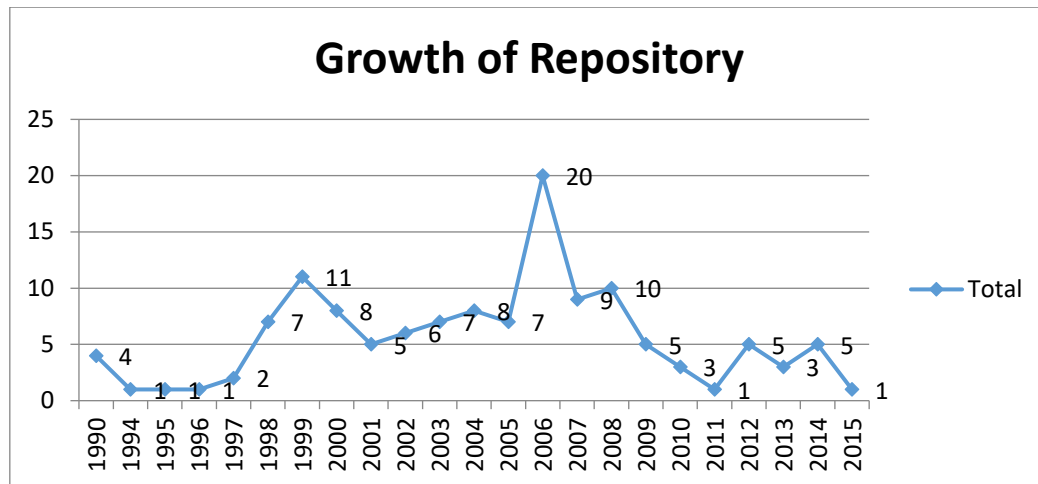


Figure -1

The figure indicates the growth of the Open Access Repository from the year 1990 to 2015. The growth of the repositories is not stable in the above figure. The repositories was highly up in the year of 2006. The figure 1, growth of the repositories also seen that the growth of the repositories is not in stable position.

4) Software-

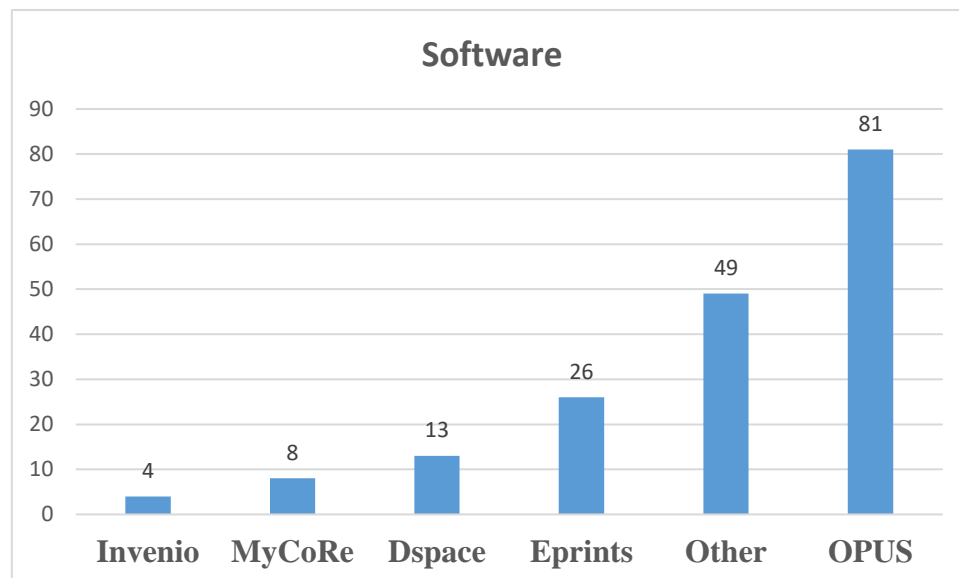


Figure-2

The figure 2 states the software's used in Open Access Repositories among the 3 countries in Germany, Switzerland and Austria. Out of the total repositories 81 (44.75%) repositories are using OPUS software. The others software was not identified, therefore it put under the category "Others" with 49 (27.07%) repositories. E-print is used by 26 (14.36%), Dspace is used by 13 (7.18%), MyCore 8 (4.41%) and Invenio 4 (2.20%). OPUS software is the most popular software among OARSs used by the Zermany, Switzerland and Austria.

5) Types of organization -

Types of organization	No of repository	Percentage
University	77	42.55 %
Not Specified	60	33.14 %
Non-university research institutions and others	30	16.58 %
University of Applied Sciences	14	7.73 %
Grand Total	181	100 %

Table -3

The table 3 indicates distribution of Open access repositories by type of organization. Universities type organizations were the leading contributors about 77 (42.55 %) repositories. Some with 60 (33.14%) of repositories found in website was not specified the type of organization hence, it was put under the categories “Not Specified”. Non-University research Institute and others and University of Applied Science were contributed no. of repository were 30 (16.58%) and 14 (7.73%) respectively.

6) Policy -

Policy	Number	Percentage
Available	74	40.89 %
Not Available	107	59.11 %
Grand Total	181	100

Table -4

The table 4 shows the policies of Open Access Repository of these 3 countries. The policies have included metadata policy, data policy, content policy, submission policy, preservation policy etc. that depends upon the materials types. Out of 181 repositories 107 (59.11%) repositories does not have policies and 74 (40.89%) repositories have their policies. It was identified that majority of the repositories did not define or frame policy for their repositories.

7) CRIS (Current Research Information System) -

Country	CRIS Yes	CRIS No	Total
Austria	3 (1.66%)	4 (2.21%)	7 (3.87%)
Germany	51 (28.18%)	109 (60.22%)	160 (88.40%)
Switzerland	1 (0.55%)	13 (7.18%)	14 (7.73%)
Grand Total	55 (30.39%)	126 (69.61%)	181 (100)

Table -5

The CRIS is a database to store and manage the data of the researcher which is conducted at in Institutions. The Open Access Repository functions a University bibliography or Current Research Information System. In Germany 51 (28.18%) repositories have using CRIS and 109 (60.22%) have not using CRIS. Austria is in second positions to using CRIS. Out of 7 repositories only 3 (1.66%) have CRIS and 4 (2.21%) have not. In Switzerland out of 14

repositories only 1 (0.55%) have using CRIS and 13 (7.18%) repositories have not using the CRIS. Out of 181 repositories 55 (30.99%) repositories have using University bibliography or Current Research Information System and 126 (69.61%) have not using.

8) Top Ten Repository -

Sl No	Name	Country	Total No of Documents
1	CERN Document Server (CDS)	Switzerland	502326
2	DESY (Deutsches Elektronen-Synchrotron) Publication Database	Zermany	186767
3	Ecole Polytechnique Fédérale Lausanne: Infoscience	Switzerland	123873
4	EconStor (Deutsche Zentralbibliothek für Wirtschaftswissenschaften, ZBW)	Zermany	87190
5	University of Zurich: ZORA (Zurich Open Repository and Archive)	Switzerland	74392
6	Deutsches Zentrum für Luft und Raumfahrt: elib - DLR electronic library	Zermany	69303
7	Universität Bern: BORIS - Bern Open Repository and Information System	Switzerland	52668
8	PUB - Publikationen an der Universität Bielefeld	Zermany	43288
9	Université de Genève: Archive ouverte UNIGE	Switzerland	42996
10	Université de Lausanne (UNIL): Serval - Serveur académique lausannois	Switzerland	42924

Table – 6

Table 6 listed the top 10 Open Access Repositories among the 3 countries. The Switzerland based repository, CERN Document Server (CDS) is consist of highest no 502326 of documents. The 2nd top Open Access Repositories i.e. DESY (Deutsches Elektronen-Synchrotron) Publication Database, from Zermany which is consists of 186767 no. of documents and so on. It can be found from the table that 6 repositories found form Switzerland and 4 repositories from Germany. There is no found repository form Austria.

9) Top ten Service Repository –

SL No	Name	Country	Software	Services
1	Publikationsserver der Universität Regensburg	Zermany	Eprints	11
2	pedocs-Dokumentenserver (Host: Fachportal Pädagogik / DIPF)	Zermany	OPUS	11

3	Helmholtz Zentrum für Infektionsforschung (HZI), Braunschweig: Repository	Zermany	Dspace	11
4	OceanRep (GEOMAR Helmholtz Zentrum für Ozeanforschung Kiel)	Zermany	Eprints	11
5	ETH Zürich (Eidgenössische Technische Hochschule): ETH E-Collection	Switzerland	Fez/Fedora	11
6	Ludwig-Maximilians-Universität München: Open Access LMU	Zermany	Eprints	10
7	Georg-August-Universität Göttingen: GoeScholar	Zermany	Dspace	10
8	Humboldt-Universität zu Berlin (HU): edoc	Zermany	edoc	10
9	University of Zurich: ZORA (Zurich Open Repository and Archive)	Switzerland	EPrints	10
10	Deutsches GeoForschungsZentrum, Helmholtz-Zentrum Potsdam: GFZ Publications	Zermany	pubman/es cidoc	10

Table -7

The above table demonstrate top Service Repositories of Austria, Switzerland and Germany. Eprints, OPUS and Dspace are the top three software of Germany to provide Service Repository in comparison to other two countries. Further analysis showed that most of the listed repositories from Germany and only repository found from the Switzerland. The services provided by the repositories are latest publications, top downloaded documents, advance research, research data, electronic dissertation, statistics, open access publishing, funded project, legal information, about the publication and policy.

Findings -

1. There are 181 repositories are available in Austria, Switzerland and Germany.
2. Surprisingly about 81 (44.75%) repositories are using OPUS software rather than of other software's used. OPUS software is the most popular software among OARSs used by the Germany, Switzerland and Austria.
3. Most of repositories contributed by Germany, it is about one third 160 (88.40%) from the total number of repositories 181.
4. The CERN Document Server (CDS) from Switzerland is occupy 1st positions to consist of highest no. of documents i.e. 502326.
5. In Germany 51 (28.18%) repositories have been using CRIS and 109 (60.22%) have not.
6. The majority of the repositories does not have any policies to maintain open access repositories among these three countries Austria, Switzerland and Germany.

Conclusion

In the digital age OARS is revolutionized the way of dissemination and preservations of the documents or knowledge and also maintain some standard to sharing information. The present study provides an evident based on data. The above study between the Austria, Switzerland and Germany and found 181 repositories. However 160 repositories found from there are not

such kinds of significant contribution open access repositories from Austria and Switzerland in term of number of repositories contributed by them. Now a days OARS plays an important role among the user's communities to preserve, disseminate and awareness of digital information resources. The major challenges facing for development of open access repositories are copyright, metadata standards and policy. It can be suggested that need awareness of OARS to Individual and organizations.

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